

Arguments for building a LTSER
infrastructure starting from the existing
LTER experience and facilities: Case
study Lower Danube River System
(Romania)

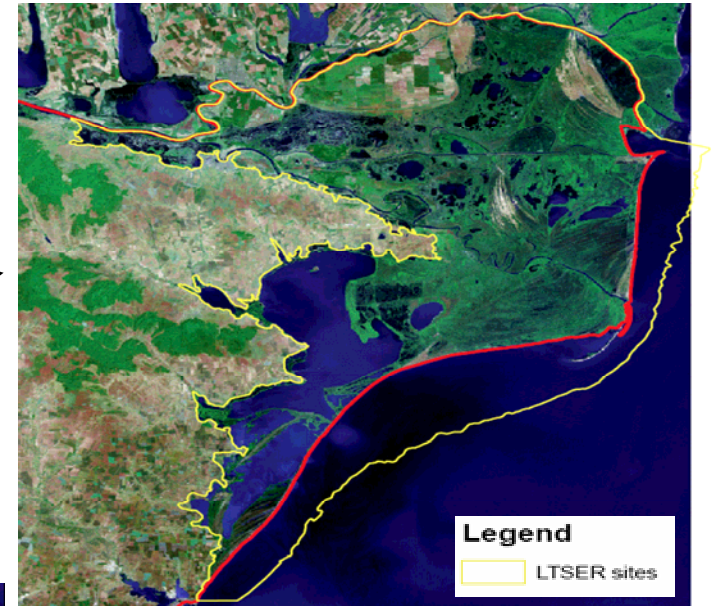
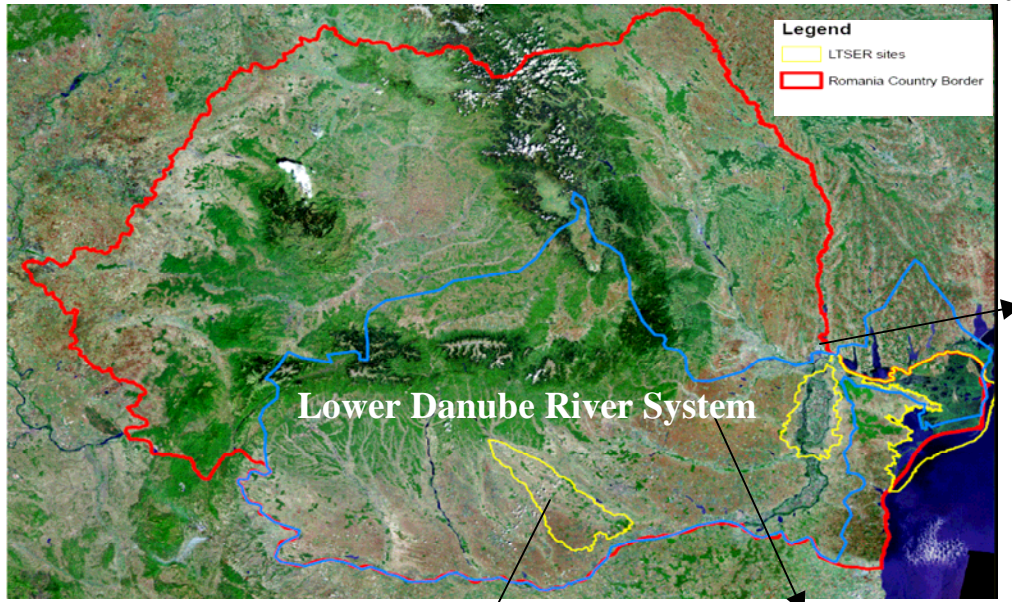
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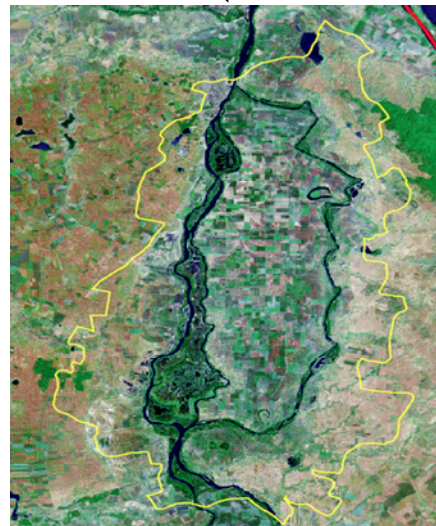
Space Scale delineation of major local and regional socio-ecological complexes from Lower Danube River System (LDRS)



Danube Delta



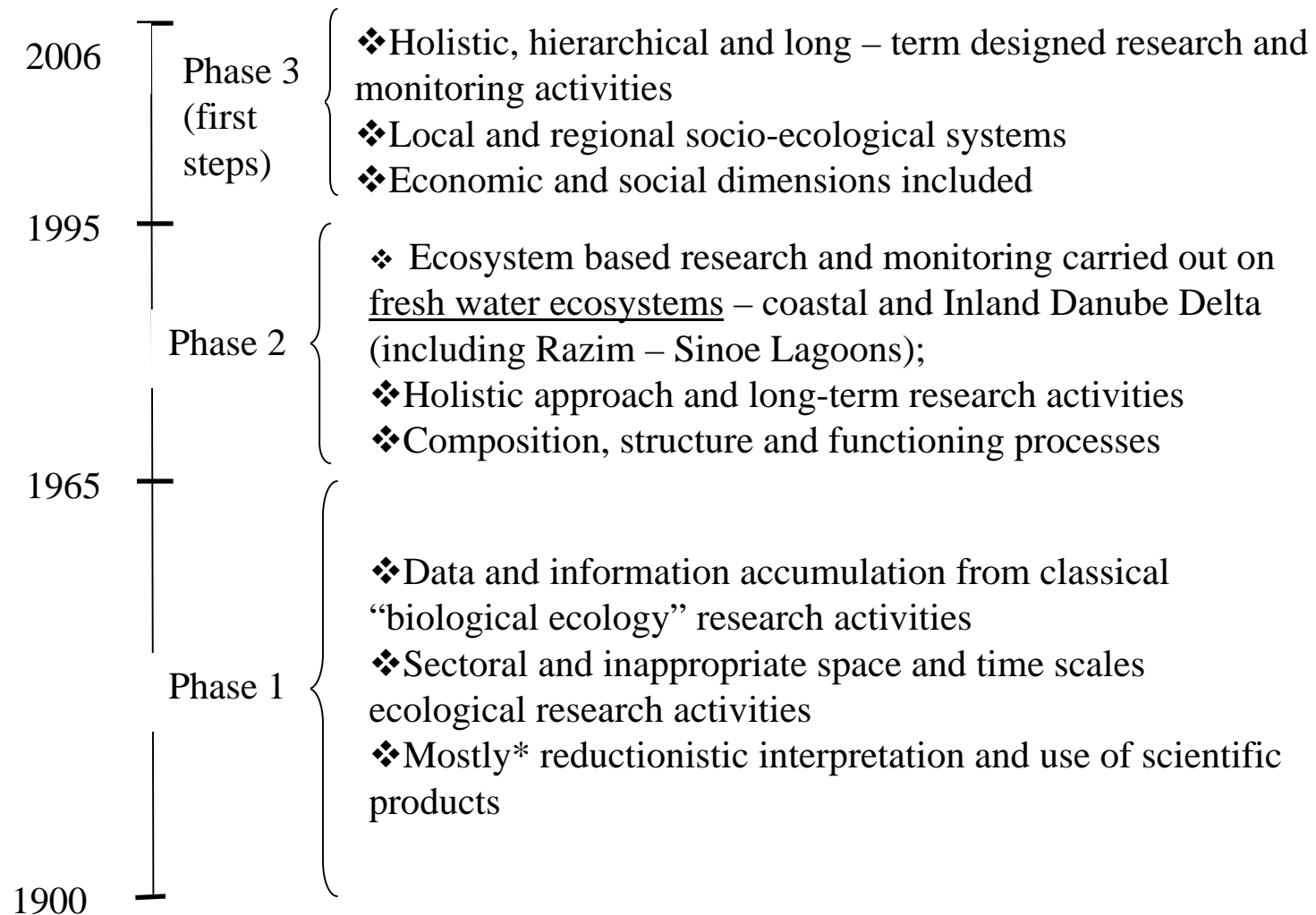
Neajlov Catchment



Braila Islands

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Dynamics of the conceptual framework and ecological research programmes development and, implementation in the Lower Danube River System (LDRS)



* Except, extremely valuable contribution brought by Dr. Gr. Antipa during 1910/1935

- ❖ Extensive and intensive ecological research activities carried out in phase 1 & 2 allowed for identification and assessment:
 - Reference state for Lower Danube Wetlands (LDWS);
 - Trends in the composition, structure and functional changes under pressure of major anthropic driving forces;
 - Impact upon most relevant wetlands functions and the respective flow of resources and services

The scientific knowledge derived from analyses and synthesis carried out in earlier 1990^s, on a large bulk of data and information have been used for formulation new goal and targets for policies and management of LDWS:

- ❖ Biodiversity conservation and sustainable use (DDBR, IBr Natural Park);
- ❖ Restoration NC in the LDWS (e.g. Lower Danube Green Corridor – 1500 km²)

!Poor or lack of proper implementation

To achieve the goal of sustainability and the objectives of biodiversity conservation and, restoration of biophysical structure of Natural Capital, there is a need for:

- ❖ Sound scientific certification, based on multi and transdisciplinary knowledge regarding both the components of NC and Socio-economic Systems;
- ❖ Effective social certification, based on strong social capital, economic valuation of NC, communication and public participation in the policy cycle;
- ❖ Addressing SEcS^s across LDRS

Although the economic valuation (late 1990^s and beginning of 2000^s) of major functions and flows of services of the natural and semi-natural ecosystems from Danube Delta and Small Islands of Braila, has brought clarification and additional strong economic arguments in favor of restoration the Green Corridor of Lower Danube River and extensive application of multifunctional farming on agricultural land from remaining polders and lower Danube catchment, some very strong constraints against it have been preserved, which explains the confusion and delay in making a clear policy option.

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The investigation carried out in the last years, upon major constraints which limit the operationalization of effective transfer of good scientific knowledge into decision cycle, clearly shown that the final choice for the proposed scenario and action plan and for its successful implementation, requires further social research which has to be focused on:

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- ❖ the structure of social capital;
- ❖ people's perceptions, attitudes and behaviors related to biodiversity, wetlands restoration and sustainable use of ecosystem services;
- ❖ traditional knowledge and practical experience of primary stakeholders (local population);
- ❖ the education, information and communication system;
- ❖ the development of public awareness and rising level of involvement into decision making process and
- ❖ the diversity and origin of conflict of interests as well as the opportunities and mechanisms for conflict resolution and, re-designing structure and metabolism of local and regional socio-economic systems.

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The results shown that most powerful and influential secondary and primary stakeholders who promote short term and sectoral policies and management plans are against extensive floodplain restoration and biodiversity conservation, while most primary stakeholders (poor and marginalized social groups representing local communities) are, or might be in favor of this scenario, if they are well informed about the potential benefits for their future wellbeing, and are deeply involved in all phases of policy cycle.

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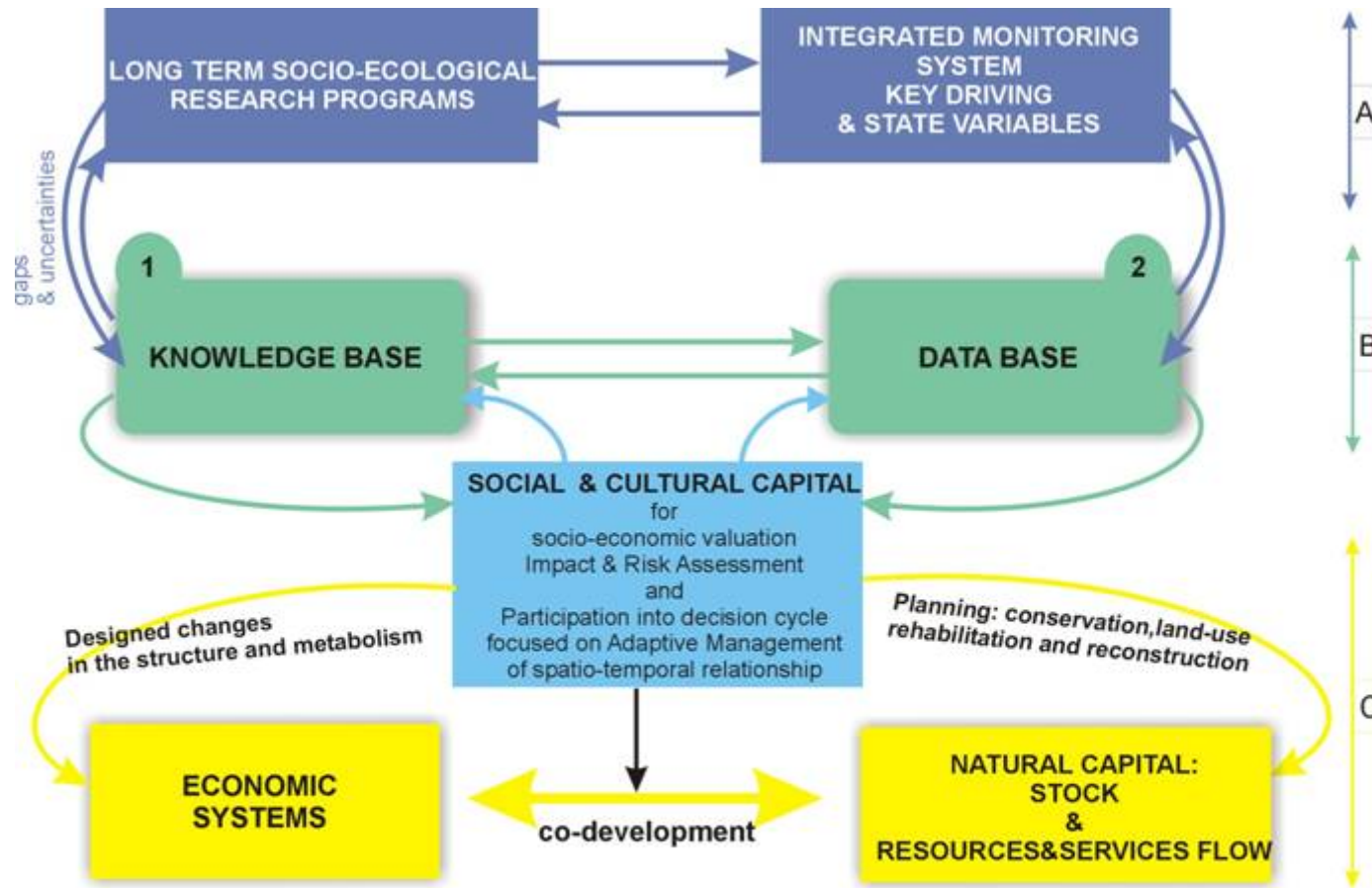
Conclusion 1

For achieving the goal of sustainability and the related objectives in the LDRS area, the decision support infrastructure has to provide:

- ❖ Good scientific product, properly packed in flexible and accessible information and trans-disciplinary knowledge system, and scientifically sound tools and methods;
- ❖ Effective integration of traditional and expert knowledge into information and Knowledge System;
- ❖ Adaptive management plan, build on cost-effective technical solutions – including practical experience of local population;
- ❖ Complex, adaptable and effective social capital in support of decision cycle.

Conclusion 2

A LT(S)ER area provides not only a research platform where trans-disciplinary knowledge is produced, but also an area where the operational infrastructure for sustainability can be designed, developed and tested.



The flow diagram showing the relationships between: A) research and monitoring infrastructure; B) information system (core of Decision Support System) and C) adaptive management for co-development (sustainability) of Danube Delta and IBr. socio-ecological complexes (LDRS)

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